**ATTACHMENT J02** **JAN 2005**

# Fort Gillem Electrical Distribution System

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# J02 Fort Gillem Electrical Distribution System

## J02.1 Fort Gillem Overview

Fort Gillem is a sub-post of Fort McPherson. Fort McPherson is located in the city of Atlanta, four miles southwest of downtown. Fort Gillem is a 1,500-acre site located in Forest Park, 10 miles southeast of Atlanta. Fort Gillem is home for the 1st U.S. Army and the U.S. Army Southeast Region Recruiting Command.

## J02.2 Electrical Distribution System Description

### J02.2.1 Electrical Distribution System Fixed Equipment Inventory

The Fort Gillem electric distribution system comprises all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation, and/or Government ownership currently, starts to the point of demarcation defined by the real estate instruments. Generally, the point of demarcation will be the building footprint. The system may include, but is not limited to, substations, transformers, underground and overhead circuits, utility poles, switches, vaults, and lighting fixtures. The following description and inventory is included to provide the Offeror with a general understanding of the size and configuration of the distribution system. The inventory is assumed to be approximately 90 percent complete. The Offeror shall base the proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description.

#### J02.2.1.1 Description

Fort Gillem currently purchases electrical power at 12.5 kV from Georgia Power at a single primary delivery point near the north boundary of the Installation.

Fort Gillem owns and operates an electrical distribution system consisting of:

- one 12.5 kV distribution substation;
- approximately 17.1 circuit miles of overhead primary distribution line; and
- approximately 1.0 circuit mile of underground primary distribution line.

The main substation, which supplies the entire compound, is a conventional, outdoor, air-insulated substation consisting of two incoming 115 kV transmission line bays, one 20 MVA 115 – 12.5 kV power transformer, and a 12.5 kV secondary structure. The secondary structure is configured with a main oil-filled circuit breaker, a main and transfer bus, voltage regulators, and four feeder oil-filled circuit breakers. Georgia Power owns the 115 kV switching and protective equipment, and the power transformer. Fort Gillem owns the 12.5 kV structure, buswork, voltage regulators, and oil-filled circuit breakers. This substation provides voltage regulation, control, and over-current protection for four 12.5 kV overhead feeders.

The majority of the distribution circuits are configured with loop tie switches to neighboring circuits. The distribution system is composed primarily of overhead, pole-line construction (which is narrow-profile, open wire construction) with pole-mounted transformer banks. There is also a small amount of underground primary construction (utilizing duct type construction practices and pad-mounted transformers). The major underground primary facilities are arranged in a looped configuration.

### J02.2.1.2 Inventory

**Table 1** provides a general listing of the major electrical system fixed assets for the Fort Gillem electrical distribution system included in the purchase. The system will be sold in an "as is, where is" condition without any warrant, representation, or obligation on the part of the Government to make any alterations, repairs, or improvements. All ancillary equipment attached to and necessary for operating the system, though not specifically mentioned here in, is considered part of the purchased utility.

**PLEASE NOTE**: Fort Gillem will require all overhead lines, pole mounted transformers and all overhead facilities to be replaced with underground line, pad mounted transformers, and underground facilities to be placed underground over a maximum 10-year period in a multi-phased approach. The first phase shall be the housing areas. A second separate underground ductbank will also be required for secure facilities, to be conveyed to the Installation for Federal ownership. (See Paragraphs C.3.1 and C11.1) Please note that Fort Gillem contains a significant amount of bedrock in possible construction areas.

**TABLE 1**
1. Fixed Inventory
Electrical Distribution System Fort Gillem

| Item | Size | Approx. Quantity | Units | Average Yr. of Construction |
|---|---|---|---|---|
| **Substation Equipment** | | | | |
| 12.5 kV Structure / Buswork | | 6 | Bays | 1989 |
| 12.5 kV OCBs | | 5 | Each | 1989 |
| Voltage Regulator | | 4 | Sets | 1989 |
| Miscellaneous | | --- | --- | 1989 |
| **Overhead Lines** | | | | |
| 12.5 kV / 3 Phase – Large | | 3.82 | Miles | 1980 |
| 12.5 kV / 3 Phase – Small | | 13.29 | Miles | 1983 |
| 7.5 kV / 1 Phase | | 0.45 | Miles | 2000 |
| Group Operated Air Break Switches | | 13 | Each | 1983 |
| Secondary | | 4.39 | Miles | 1982 |
| Capacitor Banks – 150 kVAR | | --- | Each | |
| **Underground Lines** | | | | |
| 12.5 kV / 3 Phase – Large | | 0.48 | Miles | 2000 |
| 12.5 kV / 3 Phase – Small | | 0.50 | Miles | 1982 |
| Secondary | | 0.24 | Miles | 1982 |
| Pad-mount Sectionalizing Switches | | 5 | Each | 2000 |
| Manholes | | 6 | Each | 2000 |
| Duct Banks | | 0.63 | Miles | 2000 |
| **Transformers – Pole Type** | | | | |
| 15 kVA & smaller | | 65 | Each | 1989 |
| 25 kVA | | 64 | Each | 1989 |
| 30 kVA | | 21 | Each | 1989 |
| 50 kVA | | 59 | Each | 1989 |

| Item | Size | Approx. Quantity | Units | Average Yr. of Construction |
|---|---|---|---|---|
| 75 kVA | | 30 | Each | 1989 |
| 100 kVA | | 35 | Each | 1990 |
| 150 kVA | | 4 | Each | 1997 |
| 167 kVA | | 9 | Each | 1991 |
| 175 kVA | | 3 | Each | 1989 |
| Total | | 290 | | |
| **Transformers - Pad Mount** | | | | |
| 1 Phase – 25 kVA | | 3 | Each | 1989 |
| 1 Phase – 333 kVA | | 3 | Each | 2000 |
| 3 Phase – 150 kVA | | 7 | Each | 1992 |
| 3 Phase – 225 kVA | | 2 | Each | 1995 |
| 3 Phase – 300 kVA | | 6 | Each | 1995 |
| 3 Phase – 500 kVA | | 3 | Each | 2000 |
| 3 Phase – 750 kVA | | 3 | Each | 2000 |
| 3 Phase – 1500 kVA | | 2 | Each | 2000 |
| 3 Phase – 2500 kVA | | 2 | Each | 1999 |
| Total | | 31 | | |
| **Street Lights** | | | | |
| Fixtures | | 422 | Each | 1983 |
| Poles | | 211 | Each | 1983 |
| Lighting Circuits | | 7.75 | Miles | 1982 |
| **Services** | | | | |
| 3 Phase | | 160 | Each | 1985 |
| 1 Phase | | 71 | Each | 1984 |

**Acronyms:**

kVA = Nominal Kilovolt Amperes

## J02.2.2 Electrical Distribution System Non-Fixed Equipment and Specialized Tools Inventory

**Table 2** lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Contractor shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

**TABLE 2**
2. Spare Parts
Electrical Distribution System Fort Gillem

| Quantity | Item | Make/Model | Description | Remarks |
|---|---|---|---|---|

| Quantity | Item | Make/Model | Description | Remarks |
|---|---|---|---|---|
| No spare parts will be available | | | | |

**TABLE 3**
3. Specialized Equipment and Vehicles
Electrical Distribution System Fort Gillem

| Description | Quantity | Location | Maker |
|---|---|---|---|
| No specialized equipment or vehicles for maintenance of the Fort Gillem electrical distribution system will be transferred to the new owner of the system. | | | |

### J02.2.3 Electrical System Marking, Manuals, Drawings, and Records Inventory

The Offeror will become compliant with and shall utilize the One Call utility marking service and shall be responsible for marking all Offeror-owned facilities within the Installation. **Table 4** lists the manuals, drawings, and records that will be transferred with the system.

**TABLE 4**
4. Manuals, Drawings, and Records
Electrical Distribution System Fort Gillem

| Quantity | Item | Description | Remarks |
|---|---|---|---|
| Fort Gillem maintains a limited collection of technical manuals, drawings, and records on the installed components of the electrical distribution system. This information will be transferred to the new owner during the transition period. System maps will be available in the technical library. | | | |

## J02.3 Current Service Arrangement

Fort Gillem currently purchases electrical power at 12.5 kV from Georgia Power at a single primary delivery point near the north boundary of the Installation.

| Annual Power Usage Fort Gillem | | |
|---|---|---|
| **FY** | **Total (kWh)** | **Peak Demand (kW)** |
| **2000** | 32,446,064 | 7,152 |
| **2001** | 30,700,393 | 6,557 |
| **Avg** | 31,573,229 | 6,855 |
| **Most Recent 12 months** | 32,249,863 | |

As required by this contract, the Contractor shall demonstrate the ability to meet and shall establish any and all requirements to provide electric distribution service to Fort Gillem.

# J02.4 Secondary Metering

The Installation will require secondary meters for internal billings of their reimbursable customers, utility usage management, and energy conservation monitoring. The Contractor shall assume full ownership and responsibility for existing and future secondary meters IAW Clause C.3.

## J02.4.1 Existing Secondary Meters

**Table 5** provides a listing of the known, existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings once a month for all secondary meters IAW H.5 and J01.5 below.

**TABLE 5**
5. Existing Secondary Electric Meters
Electrical Distribution System Fort Gillem

| Location | Customer ID | Phase/Voltage | Meter Make |
|---|---|---|---|
| Transformer Yard117 | B101 #1-17811649 | 3PH 120-480V | General Electric |
| | B101 #1-17811650 | 3PH 120-480V | General Electric |
| Transformer Yard117 | B101 #1-17811652 | 3PH 120-480V | General Electric |
| Transformer Yard117 | B101 #1-17811662 | 3PH 120-480V | General Electric |
| Transformer Yard117 | B101 #1-17811663 | 3PH 120-480V | General Electric |
| Transformer Yard117 | B101 #1-17811665 | 3PH 120-480V | General Electric |
| Transformer Yard117 | B101 #1-17811666 | 3PH 120-480V | General Electric |
| Building | B-207 #1-17811668 | 3PH 120-480V | General Electric |
| Building | B-207 #2-17811653 | 3PH 120-480V | General Electric |
| Building | B-207N-2021909 | 3PH 120-480V | Schlemberger |
| Building | B-208-7-17811655 | 3PH 120-480V | General Electric |
| Building | B-208S-8654764 | 3PH 120-480V | General Electric |
| Pole | B-209TR-64725709 | 3PH 120-480 | General Electric |
| Building | B-210-5-17811658 | 3PH 120-480 | General Electric |
| Building | B-210-6-17811660 | 3PH 120-480 | General Electric |
| ? | B-210-68081629 | 3PH 120-480 | General Electric |
| Building | B-210-7-17811661 | 3PH 120-480 | General Electric |
| Building | B-211-1-17811648 | 3PH 120-480 | General Electric |
| Building | B-211-2-17811647 | 3PH 120-480V | General Electric |

| Location | Customer ID | Phase/Voltage | Meter Make |
|---|---|---|---|
| Building | B-211-3-17811651 | 3PH 120-480V | General Electric |
| Building | B-211-A-17811646 | 3PH 120-480V | General Electric |
| Pole | B-212-64-725-704 (FEMA) | 3PH 120-480V | General Electric |
| Building | B-212-7-17811657 | 3PH 120-480V | General Electric |
| Pole | B-213-45710753 | 3PH 240V | |
| P ole A45T | B-213N-0335033 | 3PH 120-480V | OSAKI |
| Building | B-214-1-17811654 | 3PH 120-480V | General Electric |
| Building | B-214-2-17811656 | 3PH 120-480V | General Electric |
| Pole AT173 | B-304-64619352 | 3PH 120-480V | General Electric |
| Pole AT128 | B-305-64619343 | 3PH 120-480V | General Electric |
| Pad Mount Transformer | B-306S-64404013 | 3PH 120-480V | General Electric |
| Pole AT165 | B-306TR-64618231 | 3PH 120-480V | General Electric |
| Building | B-307-80-556-735 | 3PH 120-480V | Siemens |
| Pad Mount Transformer | B-308-64402990 | 3PH 120-480V | General Electric |
| Pole AT157 | B-308TR-64619350 | 3PH 120-480V | General Electric |
| Pole AT146 | B-308W-0319613 | 3PH 120-208V | OSAKI |
| Pole AT183 | B-309-64619333 | 3PH 120-480V | General Electric |
| Building | B-310-18196559 | 3PH 120-480V | Siemens |
| Pole AT112 | B-310P-64618238 | 3PH 120-480V | General Electric |
| Transformer Room | B-310TR-0319851 | | |
| Transformer Yard117 | B-401-0328392 | 3PH 120-480V | OSAKI |
| Pole C-14-TU | B-407-0561053 | 3PH 120-480V | OSAKI |
| Pole C-12-T | B-407N-81-670-760 | 3PH 120-480V | Siemens |
| Pole C-36-TU | B-409-0561066 | 2PH 120-208V | OSAKI |
| Pole C-21-TU | B-410&411-0561054 | 2PH 120-208V | OSAKI |
| pole C-100-T | B-505N.E.POLE-0323483 | 3PH 120-208V | OSAKI |
| Pole C-102-T | B-505TR-64618239 | 3PH 120-480V | General Electric |
| Pole C-183-T | B-506TR-64618236 | 3PH 120-480V | General Electric |

| Location | Customer ID | Phase/Voltage | Meter Make |
|---|---|---|---|
| Pole C-182-T | B-507TR-64619340 | 3PH 120-480V | General Electric |
| Pole C-82-T | B-509TR-64617047 | 3PH 120-480V | General Electric |
| Pole C-195-T | B-510TR-64618242 | 3PH 120-480V | General Electric |
| Pole C-77-T | B-511T-64619355 | 3PH 120-480V | General Electric |
| Pole C-207-T | B-512TR-64618337 | 3PH 120-480V | General Electric |
| Pole C-204-T | B-513-64619344 | 3PH 120-480V | General Electric |
| Pole C-206-T | B-513TR-64619347 | 3PH 120-480V | General Electric |
| Pole D-15-T | B-514-64619342 | 3PH 120-480V | General Electric |
| Pole West Side | B-516-95-956-135 | | |
| Pole West Side | B-608-0328443 | 3PH 120-208 | OSAKI |
| Pole | B-609-0323427 | 3PH 120-208V | OSAKI |
| Pole D 659 | B-610-64726864 | 3PH 120 -480V | General Electric |
| ? | B-610-64856254 | 3PH 120-480V | General Electric |
| Pole | B-610-89547048 | 3PH 120-208V | OSAKI |
| Pole | B-610N-0334563 | 3PH 120-208V | OSAKI |
| Pad Mount Transformer | B-700-95848788 | 3PH 277-480V | General Electric |
| Pole | B-701-0331486 | 3PH 120-208V | OSAKI |
| Pole | B-702-0339118 | 3PH 120 -208V | OSAKI |
| Pole | B-710-0329860 | 3PH 120-208V | OSAKI |

## J02.4.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters for each electric service at Fort Gillem. A partial list of new meter locations is listed in Table 6 below. New secondary meters shall be installed IAW Clause C.17, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Clauses C.3, H.5, and J01.5 below.

**TABLE 6**
6. New Secondary Meters
Electrical Distribution System Fort Gillem

| Meter Location | Meter Description |
|---|---|
| New electric meters, where not currently existing, will be required for each service including a meter new meter for each bay per warehouse. | |

| | |
|---|---|
| | B-720-15860017 |
| | B-839-8621441 |
| | B-839A-4008631 |
| | ENVIRONMENTAL CONTRACTOR-94444045 |
| | HAZ-MAT-STORAGE-8637814 |
| | QTRS-135A-70168968 |
| | QTRS-135B-70168800 |
| | QTRS-136A-70168699 |
| | QTRS-136B-70168798 |
| | QTRS-137A-70168464 |
| | QTRS-137B-70168463 |
| | QTRS-138A-70168462 |
| | QTRS-138B-70168677 |
| | QTRS-139A-70168694 |
| | QTRS-139B-70168797 |
| | RRCAR-96486228 |
| | SAJONES-01080151BQP |
| | TRLL-01080150BQP |
| | YARD-96486230 |
| | 900AREA-54883409 |
| | B101 #1-17811667 |
| | B-131-0519306 |
| | B-205-53043135 |
| | B-206-8650966 |
| | B-214-29519935 |
| | B-214-67588642 |
| | B-214N-0323443 |
| | B-220-55108417 |
| | B-224-0328466 |
| | B-211-64726861 |
| | B-619-18397808 |
| | B-604-24099051 |
| | B-505POLE-0321354 |
| | B505S-64438136 |
| | B-213-63300654 |
| | B-304N-64619348 |
| | B-305N-64665207 |

| | |
|---|---|
| | B-305S-6466843 |
| | B-307-0-323-441 |
| | B-327-24467272 |
| | B-508-64619353 |

# J02.5 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

Invoice (IAW G.2). The Contractor's monthly invoice shall be prepared with data items as indicated below. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

**Outage Report:** The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall include the following information for Scheduled and Unscheduled outages:

***Scheduled:*** Requestor, date, time, duration, facilities affected, feedback provided during outage, outage notification form number, and digging clearance number.

***Unscheduled:*** Include date, time and duration, facilities affected, response time after notification, completion times, feedback provided at time of outage, specific item failure, probability of future failure, long term fix, and emergency digging clearance number.

Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

**Meter Reading Report:** The monthly Meter Reading Report shall include; meter location, location identification number, installation, meter number, meter reader name, meter reading date (month, date), present reading, previous reading, consumption. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

# J02.6 Energy Savings Projects

There are currently no existing energy saving projects for the exterior electrical distribution system at Fort Gillem.

# J02.7 Service Area

IAW Clause C.4, Service Area, the service area is defined as all areas within the Fort Gillem boundaries. Offerors will have an opportunity to utilize an unimproved lot of land within Fort Gillem, size and location TBD.

# J02.8 Off-Installation Sites

Lake Allatoona Recreation Site is an offsite area located approximately 45 miles north of Fort McPherson included under CLIN 0005 and CLIN 0006 and as described in Sections J05 and J06..

# J02.9 Specific Transition Requirements

IAW Clause C.17, Transition Plan, **Table 7** lists service connections and disconnections required upon transfer, and **Table 8** lists the improvement projects required upon transfer of the Fort Gillem electrical distribution system.

**TABLE 7**
7. Service Connections and Disconnections
Electrical Distribution System Fort Gillem

| Location | Description |
|---|---|
| Required service connections and disconnections will be provided to the contractor, as the requirements become known. | |

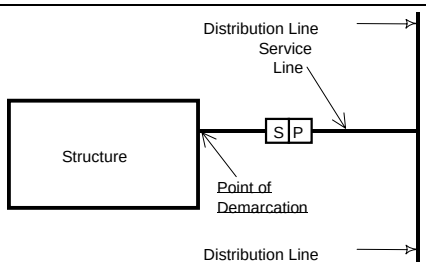
**TABLE 8**
8. System Improvement Projects
Electrical Distribution System Fort Gillem

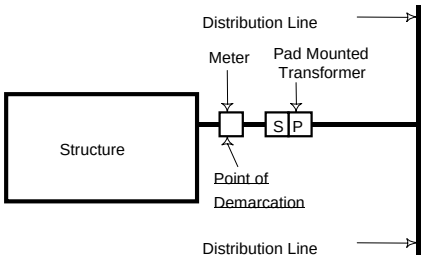
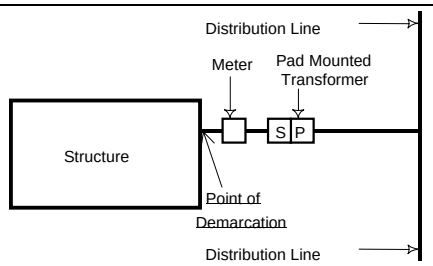
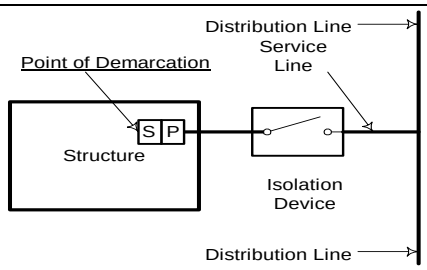
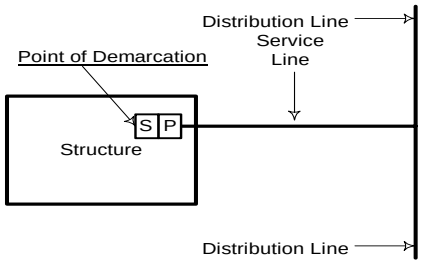
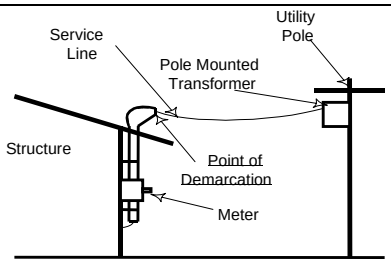
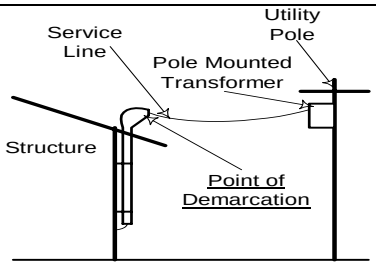
| Project Location | Project Description |
|---|---|
| All overhead electric facilities shall be converted to underground over a maximum 10-year period using a multi-phased approach. | |
| A separate second utility ductbank shall be constructed in parallel to the high voltage ductbank when the overhead electric distribution system is placed underground. The second ductbank will be built for secure communication lines. Coordination with the Department of Public Works (DPW), Director of Information Management (DOIM), Staff Judge Advocate (SJA), and Installation security personnel will be needed to develop construction requirements and specifications. Planning documents for the high voltage ductbank and the secure/communication ductbank will need to be reviewed and approved by the Installation prior to start of construction. | |
| Electric meters will be required for each service location, including each bay of any warehouses. | |

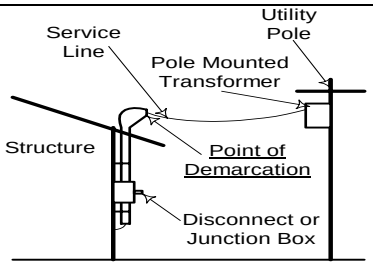
# J02.10 Electric Distribution System Points of Demarcation

The point of demarcation is defined as the point on the distribution system where ownership changes from the Grantee to the building owner. This point of demarcation will typically be at the point the utility enters a building structure or the load side of a transformer within a building structure. The table below identifies the type and general location of the point of demarcation with respect to the building for each scenario. During the operation and maintenance transition period, concurrence on specific demarcation points will be documented during the joint inventory of facilities.

**TABLE 9**
9. Points of Demarcation
Electrical Distribution System Fort Gillem

| Point of Demarcation | Applicable Scenario | Sketch |
|---|---|---|
| Point of demarcation is the first point of disconnect at or in the facility. | Pad Mounted Transformer located outside of structure with underground service to the structure and no meter exists. |   |

| Point of Demarcation | Applicable Scenario | Sketch |
|---|---|---|
| Down current side of the meter | Residential service, and three phase self contained meter installations. Electric Meter exists within five feet of the exterior of the building on an underground secondary line. |  |
| Point of demarcation is the first point of disconnect at or in the facility. | Three Phase CT metered service. |  |
| Secondary terminal of the transformer inside of the structure | Transformer located inside of structure and an isolation device is in place with or without a meter<br>Note: Utility Owner must be granted 24-hour access to transformer room. |  |
| Secondary terminal of the transformer inside of the structure | Transformer located inside of structure with no isolation device in place.<br>Note: Utility Owner must be granted 24-hour access to transformer room. |  |
| Point of demarcation is the point where the overhead conductor is connected to the weather head. | Electric meter is connected to the exterior of the building on an overhead secondary line. |  |
| Point of demarcation is the point where the overhead conductor is connected to the weather head. | Pole Mounted Transformer located outside of structure with secondary attached to outside of structure with no meter. |  |

| Point of Demarcation | Applicable Scenario | Sketch |
|---|---|---|
| Point of demarcation is the point where the overhead conductor is connected to the weather head. | Service may be overhead or underground. A disconnect switch or junction box is mounted to the exterior of the structure with no meter. |  |

# J02.11 Unique Points of Demarcation

The following table lists anomalous points of demarcation that do not fit any of the above scenarios.

**TABLE 10**
10. Unique Points of Demarcation
Electrical Distribution System Fort Gillem

| Building No. | Point of Demarcation Description |
|---|---|
| #516 | Transformer located inside building #516. POD is at the secondary terminal of the transformer as indicated in POD #4 above. |

# J02.12 Plants and Substations

**TABLE 11**
11. Plants and Substations
Electrical Distribution System Fort Gillem

| Description | Facility No. | State Coordinates | Other Information |
|---|---|---|---|
| Substation – | | | |
| Six bay 12.5 kV structure / buswork, five 12.5 kV OCB's, 12 voltage regulators | | | |

# J02.13 Service Response Times

The Offeror shall respond to normal/routine outages within 1 hour. Emergency situations will require 30-minute response. Please indicate in the Technical Proposal (Volume I) how the Offeror will consistently insure meeting these response time requirements.